

Remarks:

Reconsideration of the application, as amended herein, is respectfully requested.

Claims 1 - 5, 7, 9, 10, 12 and 24 - 46 are presently pending in the application. Claims 1, 4, 10, 12, 24, 28, 29, 30 and 33 - 38 have been amended. Claims 6, 8, 11 and 13 have been canceled herein. Claims 14 - 23 were previously canceled. New claims 39 - 46 have been added.

In item 2 of the above-identified Office Action, claims 1, 10 - 13, 24, 28 and 33 - 36 were rejected as allegedly being indefinite under 35 U.S.C. § 112, second paragraph for including the term "and/or" and, particularly in claims 13 and 28 "such as, for example". Applicants have canceled claims 11 and 13. Additionally, Applicants have amended claims 1, 10, 12, 24, 28 and 33 - 36, herein, to address the concern raised in item 2 of the Office Action.

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph.

In item 4 of the Office Action, claims 11 - 13 and 34 - 36 were rejected as allegedly being directed towards non-statutory subject matter under 35 U.S.C. § 101. Applicants respectfully traverse this rejection. Item 4 of the Office

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Action alleges, more particularly, that claims 11 - 12 and 34 - 35 define a program and a computer program without defining a computer-readable medium or memory, and thus, is non-statutory subject matter. Applicant respectfully disagrees.

Claims 11 and 13 have been canceled from the instant application. With regard to claim 34, the Office Action recommended that the phrase "stored in a computer readable medium" be added after "A computer program". "... Applicants have made that recommended change. As such, Applicants' claim 34 is believed to be statutory subject matter, as set forth in MPEP § 2106.01

Additionally, both of Applicants' claims 12 and 35 recited, among other limitations:

**A computer-readable storage medium on which a program is stored** [emphasis added by Applicants]

As such, at least Applicants' claims 12 and 35 recited the computer-readable storage medium. As acknowledged on page 2 of the Office Action, functional descriptive material recorded on a **computer-readable medium will be statutory**. Thus, it is believed that Applicants' **computer-readable storage medium** of claims 12 and 35 are statutory. Item 4 of the Office Action, page 3, recommended that Applicants' claims 12 and 35 add the

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word "computer" between "which a" and "program". Applicants have made that recommended change.

Further, Applicants' claim 36 was alleged to be drawn to functional descriptive material recorded on a data stream. On page 3 of the Office Action, it was stated, in part:

Claims 13 and 36 are drawn to functional descriptive material recorded on a data stream. Normally, the claim would be statutory. However, the specification, at page [0050] of the publication application defines **the claimed computer program as encompassing statutory media such as a network for transfer** or a downloaded program as well as non-statutory subject matter [sic] such as a "signal". [emphasis added by Applicants']

As such, Applicants have amended claim 36 to recite, among other limitations:

**A computer program, stored on a network for transfer** and enabling a computer, after having been loaded into the memory of the computer, to perform a method for coding transform coefficients [emphasis added by Applicants]

The amendment is supported by the specification of the instant application, for example, in paragraph [0050] of the printed publication of the instant application, which states:

**Such computer programs can, for example, (for a fee or free of charge, freely accessible or protected by a password) be provided in a data or communication network for downloading.** The computer programs provided in this way can then be utilized by a method in which **a computer program according to claim 11 is downloaded from a network for transfer**, such as, for example, from the Internet, to data processing means

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connected to the network. [emphasis added by Applicants]

As such, Applicants' claimed computer program "stored on a network for transfer" is believed to be statutory subject matter, as stated on page 3 of the Office Action.

Applicants' believe that all currently pending claims of the instant application claim statutory subject matter under 35 U.S.C. § 101.

Additionally, in item 6 of the Office Action, claims 1 - 12 and 24 - 38 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U. S. Patent No. 7,190,840 to Said ("SAID"). In item 7 of the Office Action, claims 1, 10 - 13, 24 and 33 - 38 were rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by U. S. Patent No. 5,819,803 to Mitchell ("MITCHELL").

Applicants respectfully traverse the above rejections, as applied to the amended claims.

More particularly, Applicants' have amended claim 1 to recite, among other limitations:

- a significance mapping is arithmetically coded, the significance mapping specifying the positions of significant transform coefficients in the block in a

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**scan order**, the coding of the significance map comprising coding, in the scan order, - except for the last scan position in the scan order - a one-bit symbol (SIG) for each coefficient of the block and a one-bit symbol (LAST) for each significant coefficient of the block, wherein (SIG) serves for identifying significant coefficients and (LAST) indicates whether there are further significant transform coefficients in the block, [emphasis added by Applicants]

Applicants' independent claims 10 and 12 have been amended to recite similar limitations, among others. Additionally, Applicants' new independent claims 45 and 46 incorporate therein similar limitations to those cited above in connection with claim 1, among others. As such, coding the significance map in the way claimed in Applicants' independent claims 1, 10, 12, 45 and 46 **enables coding merely the significant coefficients**. Further, in Applicants' claims 1, 10, 12, 45 and 46, the **contexts** for the transform coefficients, as well as the **symbols of the significance map**, enable a higher coding gain.

Certain limitations of Applicants' claim 1, discussed above, are similar to limitations that previously presented in Applicants' dependent claim 31 (which included the limitations of claims 29 and 24, from which claim 31 depended). The Office Action alleged that the limitations of Applicants' previously presented claim 31, were anticipated by **SAID**. Applicants respectfully disagree..

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More particularly, **SAID** discloses a compression of transform coefficients using multiple scans. In particular, in **SAID**, a transform coefficient block 210 of a frequency domain representation of a digital image is processed by performing three scans 212, 214 and 216 on three different regions of the block. See, for example, col. 2 of **SAID**, lines 21 - 24. **SAID** discloses that the coefficients in each scan are coded by conventional Huffman coding followed by run-length encoding or by entropy encoding or arithmetic coding. See, for example, col. 2 of **SAID**, lines 51 - 54. In **SAID**, the three scans are coded **separately** and added to the bitstream, **consecutively**. See, for example, col. 2 of **SAID**, lines 42 - 48.

In the method of **SAID**, the last non-zero coefficient in a scan is found and its position is coded and added to the bitstream. See, for example, step 320 of **SAID**, and col. 3 of **SAID**, lines 7 - 8. Then, in the method of **SAID**, the coefficients in the scan are processed in reverse order from the last non-zero coefficient in the scan to the first coefficient. See, for example, step 322 of **SAID**, and col. 3 of **SAID**, lines 8 - 10. In processing the coefficients, **SAID** discloses using the  $n^{\text{th}}$  coefficient in the scan as context for the  $n-1^{\text{th}}$  coefficient in the scan. See, for example, col. 3 of **SAID**, lines 15 - 17. In particular, in **SAID**, the  $n^{\text{th}}$  coefficient is used to select one of multiple codebooks for the  $n-1^{\text{th}}$  coefficient and the

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selected codebook is used to provide a codeword for the  $n-1^{\text{th}}$  coefficient. See, for example, col. 3 of SAID, lines 17 - 20. Additionally, with regard to the coding of the position of the last non-zero coefficient in step 322 of the method of SAID, SAID discloses that, if a scan contains all zero coefficients, the position of the last non-zero coefficient may be coded as a zero and no coefficients would be processed in this case. See, for example, col. 3 of SAID, lines 10 - 13. SAID discloses that the above steps are performed for each of the three scans 212, 214 and 216.

From the foregoing, it can clearly be seen that SAID fails to teach or suggest, among other limitations, the coding of a significance map as particularly recited in Applicants' current claims 1, 10, 12, 45 and 46. Rather, in SAID, merely the position of the last non-zero coefficient is coded, and from that position, all coefficients are coded in reverse scan order, independent on their significance. However, Applicants' claims 1, 10, 12, 45 and 46 require, among other things, coding a significance map specifying the positions of significant transform coefficients in the block. In other words, Applicants' invention of claims 1, 10, 12, 45 and 46 enables coding of merely the significant coefficients. Further, in Applicants' invention of claims 1, 10, 12, 45 and 46, the contexts for the transform coefficients, as well as

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the symbols of the significance map, enable a higher coding gain.

Further, among other limitations, SAID is silent regarding any **context-adaptivity** with respect to the coding of a significance map itself, as required by Applicants' new claim 43.

For the foregoing reasons, among others, Applicants' claims 1, 10, 12, 43, 45, 46 and the claims depending therefrom, are believed to be patentable over the SAID reference.

Further, Applicants' independent claims 24 and 33 - 36 have been amended to recite, among other limitations:

**in a reverse scan order, starting with the last transform coefficient being unequal to zero within the block, the values (levels) of the transform coefficients being unequal to zero are coded in a context-dependent way using contexts depending on a number of transform coefficients already coded in the reverse scan order having a magnitude of 1 and a number of transform coefficients already coded in the reverse scan order having a magnitude of greater than 1, respectively** [emphasis added by Applicants]

Applicants' independent claims 37 and 38 have been amended to recite similar limitations, among others. As such, among other limitations, Applicants' independent claims 24 and 33 - 38 require, among other things, that the values of the transform coefficients being unequal to zero being coded in a



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context dependent way depending on the number of transform coefficients already coded having a magnitude of 1. It is clear from reading the SAID reference that, in SAID, the value of the previous coefficient, in reverse scan order, is used for determining the context for coding the current coefficient. As such, SAID fails to teach or suggest, among other limitations of Applicants' claims, using the number of transform coefficients already coded in the reverse scan order having a magnitude of 1, as required by Applicants' claims 24 and 33 - 38, thereby enabling a higher coding gain.

In view of the foregoing, Applicants' claims are believed to be patentable over the SAID reference.

Further, in item 7 of the Office Action, Applicants' former independent claims were alleged to be anticipated by MITCHELL. Applicants' amended and new independent claims are believed to be patentable over MITCHELL, as well as over SAID, for the foregoing reasons, among others. More particularly, like SAID, MITCHELL fails to teach or suggest, among other limitations of Applicants' claims: coding a significance map specifying the positions of significant transform coefficients in the block, as required by Applicants' claims 1, 10, 12, 45 and 46; and the values of the transform coefficients that are unequal to zero being coded in a context dependent way

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depending on the number of transform coefficients already coded having a magnitude of 1, as required by Applicants' independent claims 24 and 33 - 38.

As such, Applicants' claims are believed to be patentable over **MITCHELL** and **SAID**, whether taken alone, or in combination.

It is accordingly believed that none of the references, whether taken alone or in any combination, teach or suggest the features of claims 1, 10, 12, 24, 33 - 38, 45 and 46. Claims 1, 10, 12, 24, 33 - 38, 45 and 46 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 1, 24 and 33.

In view of the foregoing, reconsideration and allowance of claims 1 - 5, 7, 9, 10, 12 and 24 - 46 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

Additionally, please consider the present as a petition for a one (1) month extension of time, and please provide a one (1)

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month extension of time, to and including, October 4, 2007, to  
respond to the present Office Action.

The extension fee for response within a period of one (1)  
month pursuant to Section 1.136(a) in the amount of \$120.00 in  
accordance with Section 1.17 is enclosed herewith.

Please provide any additional extensions of time that may be  
necessary and charge any other fees that might be due with  
respect to Sections 1.16 and 1.17 to the Deposit Account of  
Lerner Greenberg Stemer LLP, No. 12-1099.

Respectfully submitted,

  
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For Applicants

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